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Cohen

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(54) **RADIATIVE TRANSFER AND POWER
CONTROL WITH FRACTAL
METAMATERIAL AND PLASMONICS**

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(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

This patent is subject to a terminal dis-
claimer.

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(Continued)

(57) **ABSTRACT**

Systems according to the present disclosure provide one or
more surfaces that function as heat or power radiating
surfaces for which at least a portion of the radiating surface
includes or is composed of “fractal cells” placed sufficiently
closed close together to one another so that a surface
(plasmonic) wave causes near replication of current present
in one fractal cell in an adjacent fractal cell. A fractal of such
a fractal cell can be of any suitable fractal shape and may
have two or more iterations. The fractal cells may lie on a
flat or curved sheet or layer and be composed in layers for
wide bandwidth or multibandwidth transmission. The area
of a surface and its number of fractals determines the gain
relative to a single fractal cell. The boundary edges of the
surface may be terminated resistively so as to not degrade
the cell performance at the edges.

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